ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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WD-R&L-21 2008

Minimum Impact BMPs for Removal of Debris from Streams and Rivers

Debris is an essential part of life for rivers and streams. Like our hearts that beat and give us rhythm, debris is rhythm to a waterway. The end of life for a riverside tree is a source of nutrients for the diverse species living in the river ecosystem. Stream and river habitat are preserved whenever nature takes its course and deposits debris in a particular location within its corridor. Development of floodplains and property along waterways requires an enormous effort with regard to preserving river health. One way we can help preserve river heath is by giving streams and rivers a chance to preserve themselves when appropriate, without human interference. We can do this by leaving debris where it is in as many instances as we can. Removing debris from a stream or river should only be performed if it posses a threat to human health or structure.

Streams and rivers provide habitat to many organisms with the assistance of shade and nutrients from nearby trees and other vegetation. When trees are pruned naturally, this woody debris provides a source of food and shelter for many organisms. Debris often becomes a substrate for algae to grow on. When debris is weathered by the environment, it generates carbon and releases it into the ecosystem. Nutrients provided by algae and carbon nourish the fish and other organisms. Debris creates resistance to flowing water, reducing the velocity of water, and thereby minimizing scour of the channel and erosion of stream banks. Snags are often the source of the resistance. It is in this area of resistance that fish and other animals can take a break from the speed of the water, have a snack, seek shelter from predators and reproduce their species.

> Debris includes detached trees, brush, leaves, and other non-sediment objects that are carried by stream flow, especially during periods of high water.

Sometimes large debris, such as logs in narrow stream channels, can lodge crosswise during floods causing obstructions and additional flooding that may threaten structures and public safety. As a consequence, removal of some stream debris may be necessary to minimize flooding and mitigate hazards. If you wish to remove debris from a stream or river, you must first document a need to remove the debris and evaluate the debris conditions. If it's determined that the debris needs to be removed, then removal must be done in the least intrusive way possible. In some instances, complex and extensive debris removal projects may require professional assistance due to large stream areas impacted and access requirements.

Documenting the Need to Remove Debris

A need for debris removal must be established prior to removing any debris from a stream or river. The debris-laden stream or river reach of concern should be evaluated over time, using the following guidelines:

- Inspect the stream or river reach on a regular basis several times a year and especially after high flows or flood events.
- Observe and record the types of debris that may be accumulating and the locations where it is found. Note the locations where there is evidence of scouring or sediment deposition.
- Identify those locations where debris may have obstructed the passage of floodwaters to the point of

creating hazardous conditions. Use any photographs of flood conditions to assist in that effort.
- Note those locations where flooding does not threaten human safety or structures. In such locations, some of the smaller debris may be left behind.

Evaluating Debris Conditions

Before deciding whether it is necessary to remove debris from a waterway, please evaluate your findings appropriately.

- Is there potential for debris build-up to effect public and structural safety?
- Does the debris build-up have the potential to cause upstream or downstream flooding?
- What kind of effect will the debris removal have on plants, fish, and wildlife?
- How would the removal effect water quality and public and private land?

Woody debris provides food and shelter for many organisms within stream and river ecosystems. It should not be removed unless it is absolutely obstructing the waterway and posing a threat to public and structural safety.

Choosing Debris Removal

- Review those locations where debris may have obstructed the passage of floodwaters.
- Identify the methods by which the debris can be removed.
- Consider using manual equipment or motorized equipment from beyond the top of bank before selecting other more intrusive methods. Intrusive methods may require a wetlands permit. If the debris removal will alter the stream or river bank and/or sediment, a wetlands permit will be needed prior to removal.

Permitting Debris Removals

Activities in surface water and their banks are regulated under state law. RSA 482-A governs New Hampshire wetlands. The law states that no person shall excavate, remove, fill, dredge or construct any structure in or adjacent to surface waters, wetlands or their banks without first obtaining a permit from the Department of Environmental Services Wetlands Bureau. A wetlands permit is generally not required for removal of non-sediment debris provided: no tracked or wheeled vehicles enter the streambed or banks, only manually operated equipment or larger equipment that is operated from the top of the bank (such as winch or excavator) is used, streambed and bottom are not disturbed, dredged materials are placed out of Wetlands Bureau jurisdiction and removal is done gradually to prevent a sudden release of impounded water that causes erosion or siltation. To obtain specific information about permitting requirements, please contact the DES Wetlands Permitting Bureau at (603) 271-2147.

General Information on Emergency Impacts

Flooding and other emergency situations arise from time to time. In the event of an emergency, it is possible to obtain authorization from DES to work in wetlands prior to receiving a wetland impact permit to temporarily stabilize areas where there is a threat to public health and safety or which threaten significant damage to private property provided that the emergency event occurred within the last five days. Refer to NHDES fact sheet WD-WB-9 Obtaining Authorization for Emergency Wetlands Impacts, . If DES offices are closed, notify the local conservation commission and/or Selectmen prior to stabilization and notify DES during the next working day.